

POWERS et al.
Application No. 09/743,898
March 29, 2005

REMARKS/ARGUMENTS

Reconsideration and allowance of this application are respectfully requested. Currently, claims 1-34 are pending in this application.

Drawings:

Applicant submitted amendments to the drawings on August 24, 2004. Applicant respectfully requests that the next Office Action indicate acceptance of these amendments to the drawings.

Rejections Under 35 U.S.C. §103:

Claims 1, 3-5, 7-14, 16-21 and 23-28 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Yerazunis et al (U.S. '382, hereinafter "Yerazunis") in view of Suzuki et al (U.S. '982, hereinafter "Suzuki"). Applicant respectfully traverses this rejection.

In order to establish a *prima facie* case of obviousness, all of the claim limitations must be taught or suggested by the prior art and there must be some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. The combination of Yerazunis and Suzuki fails to teach or suggest all of the claim limitations. For example, the combination fails to teach or suggest "wherein the client is arranged to obtain information from said server means about the status of the adjacent zone only when the likelihood of the avatar moving within the predetermined range of the boundary of said adjacent

zone is above a threshold,” as required by independent claim 1 and its dependents. Similar comments apply to independent claim 24 and its dependents. The combination also fails to teach or suggest “wherein said client is arranged to communicate with the one or more servers to obtain information on the status of one or more further zones in the virtual environment when the likelihood of the avatar moving within a predetermined range of the boundary of said one or more further zones is above a threshold,” as required by independent claim 21 and its dependents. With respect to independent claim 12, the combination fails to teach or suggest storing frequency data (i.e., probability) for categories of movement corresponding to potential movement of an avatar into a position within a predetermined range of a specified boundary.

Section 5 (page 3) of the Office Action apparently admits that Yerazunis fails to teach the above claim limitations. Applicant submits that Suzuki fails to remedy the admitted deficiencies of Yerazunis. In particular, col. 6, lines 1-24 (specifically identified in the Office Action) of Suzuki states the following:

“According to the present invention when the relationship between two arbitrary avatars satisfies a predetermined condition after the updating of the data stored in the memory 53, the terminals corresponding to the two avatars are connected via the channel interface part 51 to enable communication or conversation between the users of these terminals. The conversation enable condition consists of, for example, the distance between the avatars and the degree of eye-to-eye contact between them as described later with reference to other embodiments. The connection control part 52 calculates the distance d between the avatars A1 and A2, for example, in the table 53A by $d^2 = (x_1 - x_2)^2 + (Y_1 - Y_2)^2$, and when $d < D$ (where D is a predetermined value) and the degree of eye-

to-eye contact defined by the directions of eyes ED1 and ED2 of the avatars A1 and A2 satisfies a predetermined condition, the connection control part 52 instructs the channel interface part 51 to connect the channel between the terminals 10₁ and 10₂ corresponding to the avatars A1 and A2 and writes the state of connection (indicated by a white circle) of the avatars A1 and A2 in a state-of-connection table 53B.

The channel interface part 51 relays processed audio and video data between the terminals 10₁ and 10₂, that is, sends the data received from the terminal 10₁ to the terminal 10₂ and the data received from the latter to the former.”

The above portion of Suzuki discloses enabling communication between two terminals (10₁ and 10₂) corresponding to avatars A1 and A2 in the event that these avatars move within a predetermined distance D of each other in virtual space. However, there is no assessment of probability involved anywhere in Suzuki, let alone an assessment of the probability of the likelihood of an avatar moving within a predetermined range of a boundary of an adjacent zone. Accordingly, even if the teachings of Honda and Suzuki were combined as proposed by the Office Action, the combination would not have taught or suggested all of the claim limitations.

Yerazunis makes no mention at all of the probability of an avatar entering an individual zone, let alone any mention of zoning at all. Section 4 (page 2) of the Office Action apparently alleges that col. 3, lines 1-18 of Yerazunis discloses estimating the likelihood of an avatar moving within a predetermined range of a boundary. Applicant respectfully disagrees with this characterization of Yerazunis. Col. 3, lines 1-18 of Yerazunis states the following:

“...automatically categorizing the information to be transmitted as to the predictability of future motion and applying appropriate smoothing algorithms based upon knowledge of what the characteristics of the future motion are likely to be. In one embodiment the system switches between a linear extrapolation algorithm for hypothesized future locations, linear interpolation for short-term predictable locations, and a Catmull-Rom spline for long term predictable locations.

For instance, a virtual reality environment may have a trolley-car moving within the environment on a fixed course (the trolley track). The path between stops for the trolley is completely determined; the only variable is the starting time. Once the trolley starts to move, its future position can be exactly predicted as a function of time for the duration of the next track segment. Because motion is known for a long time into the future, the path can be a long, smooth motion. One might even consider the predetermined path to be a “script” for the trolley-car’s motions.”

The above passage of Yerazunis makes no reference to any boundaries in a space in which an avatar may move. Accordingly, Applicant respectfully submits that claims 1, 3-5, 7-14, 16-21 and 23-28 are not “obvious” under 35 U.S.C. §103 over Yerazunis and Suzuki and therefore respectfully requests that the rejection of these claims be withdrawn.

Claims 2, 6, 15 and 22 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Yerazunis in view of Suzuki and further in view of Leahy et al (U.S. ‘045, hereinafter “Leahy”). Leahy fails to remedy the above described deficiencies of Yerazunis and Suzuki with respect to the claimed invention. Applicant therefore respectfully requests that the above rejections under 35 U.S.C. §103 be withdrawn.

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New Claims:

New claims 29-34 have been added to provide additional protection for the invention. New independent claim 29 requires, *inter alia*, “predicting a likelihood of the avatar, based on the determined pattern of movement, of moving to within a predetermined range of a boundary of a zone in which the avatar is currently positioned;...and obtaining information for a zone adjacent to the zone in which the avatar is currently positioned when the predicted likelihood exceeds the threshold.” Applicant submits that new claims 29-34 are allowable.

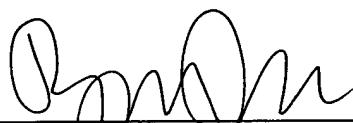
Conclusion:

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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